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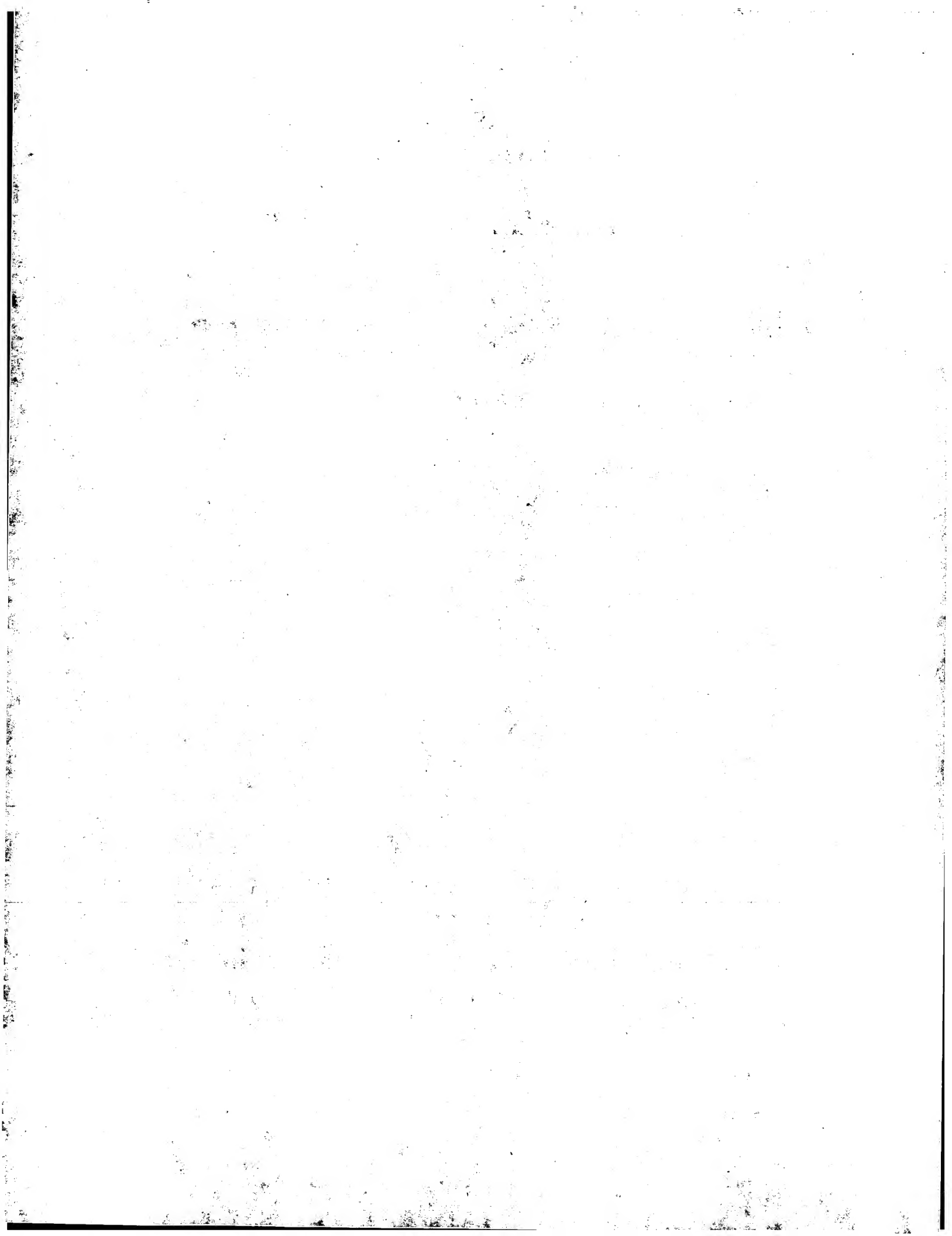
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# CANADIAN PATENT

SIGN CASING

CANADA  
DIV. 338  
*Q40*

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No. OF CLAIMS 12



KING

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SIGN CASING

FIG. 1

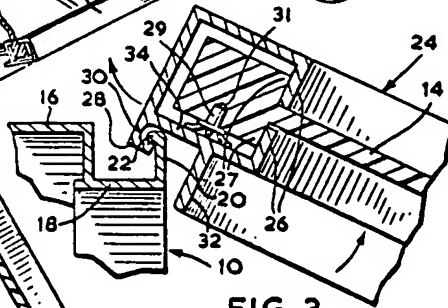
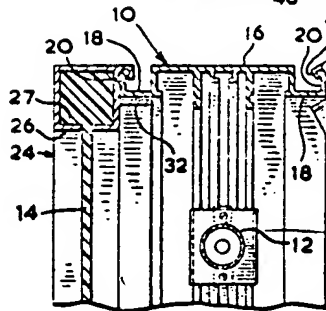
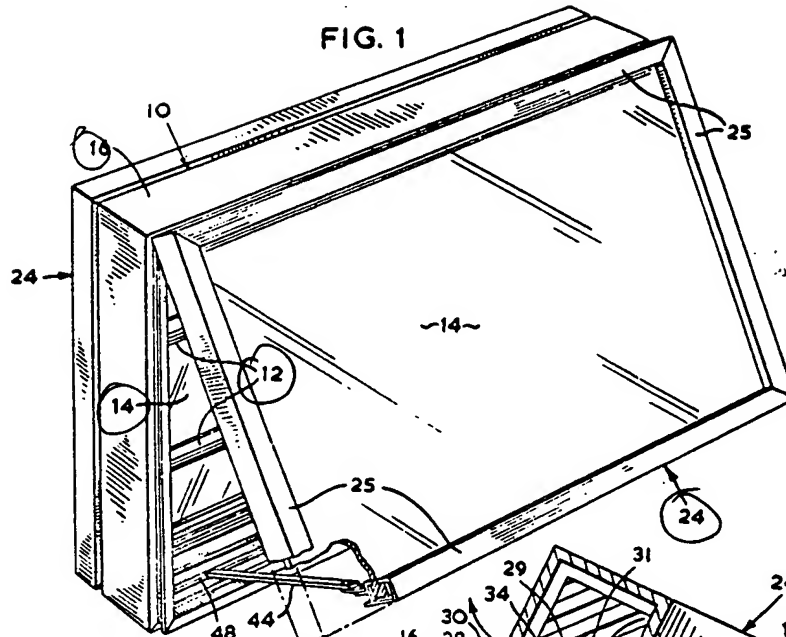


FIG. 3

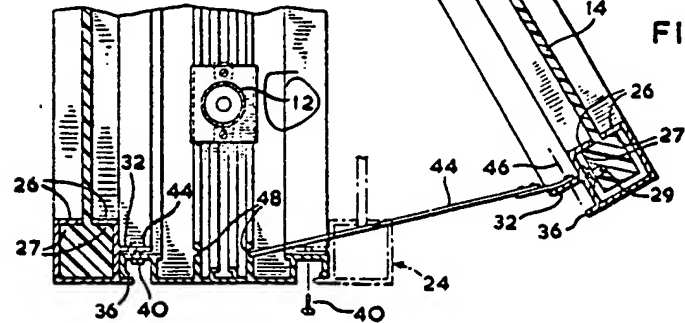


FIG. 2



This invention relates to a novel construction for an illuminated sign of the type wherein illuminated elements shine through at least partially translucent members and the latter members have characters delineated by contrasting colours or by opaque areas.

By translucent element I include character or symbol forming members which have transparent, translucent or even vacant areas but which also may be partially opaque.

It is an object of this invention to provide such a  
10 sign which is easy to assemble and disassemble, which is secure when assembled, which is easily opened for work on the sign without disassembly, and which provides a sign of pleasing appearance.

The invention provides that the main frame, which has means to support the illuminating elements and for attachment to the support or suspension means for the sign, has an upstanding ridge above the intended position of the translucent element (whether planar or not) and the ridge adjacent to its upper end is preferably shaped to form a lip inwardly  
20 extending from the desired translucent element position. The translucent element is mounted on a sub-frame and this is provided with a hook shaped to extend over and inwardly of the upper end of said ridge. In the preferred form the hook is shaped to extend over, inwardly of, and under said lip. The ridge and hook or lip and hook are designed to allow relative rotation between them so that the sub-frame may be rotated outwardly and upwardly to allow repairs to the sign or replacement of fluorescent elements. The fact that the hook underlies the lip, a predetermined amount, with the provi-  
30 sion of means in the lower and inward positions of the sub-frame, for limiting inward movement of the sub-frame relative to the main frame, ensures that the sub-frame may not be re-



moved from the frame by chance movement or impact.

The spacing of the end of the hook from the closest part of the sub-frame is greater than dimensions of the lip and ridge which will be passed by the line joining the end of the hook and the closest part of the wall in rotation of the sub-frame upwardly and outwardly from its normal attitude. Hence the hook may be removed from beneath the lip after a predetermined rotation of the sub-frame so that the sub-frame with its translucent element may be removed from the main frame when  
10 desired.

In a preferred embodiment, the main frame ridge is the upright of a member which is L-shaped in cross-section, with the horizontal bar of the L being formed by a horizontal wall extending out from the main frame with the ridge upstanding from the outer end thereof. The sub-frame hook is on the upper end of the upright of an L-shaped flange with the other arm of the L-shaped flange oriented to extend under the corresponding part of the main frame member in the normal attitude of the sub-frame. This other arm prevents upward movement or inward movement of the sub-frame relative to the main  
20 frame until the sub-frame has been swung upwardly and outwardly relative to the main frame a predetermined amount. Thus the hook-lip connection may be used for rotation motion below this predetermined amount; while for removal, the hook and sub-frame are swung up beyond the predetermined amount, then moved inwardly until the hook is free of the lip, when the sub-frame may be lifted off the frame.

In drawings which illustrate a preferred embodiment of the invention:

30 Figure 1 shows a sign of the type using the invention;  
Figure 2 shows a cross-section of the sign in Figure 1; and



Figure 3 shows the operation of the hinge for the sign.

In the drawings is shown a sign having a main frame 10 in which are mounted the illuminating elements 12 which may be incandescent or fluorescent and may be arranged in any desirable manner within the frame for convenient installation or wiring and for proper illumination of the one or two translucent elements.

The sign may have one translucent element 14 on one side of the illuminating elements with a back on the opposite side, or the sign may have translucent elements 14 on both sides of the illuminating elements as shown.

The reference to 'outward' in the specification and claims refers to a direction from the illuminating elements toward the translucent element in either a one or two sided sign and 'inward' refers to the opposite direction.

Most translucent elements 14 will be of sheet form, usually of glass or plastic, and while they may be bulged or curved or embossed to 'set off' the information, the location of such translucent element 14 may usually be defined in terms of a plane which is close to all parts of the element and which has the translucent material distributed about equally on either side. This is the plane intended, when the term 'plane of the translucent element' is referred to.

The main frame 10 is preferably designed to extend on the top, bottom and sides of the sign, about the illuminating elements and the top part 16 of the main frame is provided with means for suspension or support of the sign. The side, top, and bottom members are preferably formed of aluminum extrusions shaped for the purpose of retaining the illuminating elements and for the purposes to be described.

The upper extrusion 16 is preferably provided with an outwardly extending wall 18, preferably extending substantially across the top of the sign to a point adjacent and inwardly of the plane of the translucent element, in its 'normal attitude', by which is meant its position during the normal use of the sign. The outer extremity of the wall 18 is provided with an upwardly extending ridge 20 forming with the wall 18 an L-shaped member in cross-section. At the upper end of ridge 20 an inwardly extending lip 22 is provided which is  
 10 preferably rounded on its upper, inner and on the lower inwardly projecting portion. The lip 22 in transverse cross section is preferably of a greater dimension in the horizontal direction than the vertical so that in cross section, the curved surfaces thereof are part of an oval or elliptical outline.

The sub-frame, for holding a translucent element is basically a rectangular frame 24 formed of four joined aluminum extrusions, and in each case the extrusion will generally be a rectangular U-shaped channel with the ends of the U inwardly turned at 26 to leave a slot which is normally free  
 20 to face the direction in which the translucent element 14 will extend from the slot to the illuminated area. The upper and lower edges of the translucent members are provided with enlarged edges 27 to be received inside the cavity in the U-shaped channel to retain the translucent member 14 in the frame. Thus in the preferred embodiment the upper and lower extrusions 25 may be individually slid over the corresponding enlarged edges of the translucent sheet then the side extrusions 25 may be slid over the side edges of the sheet, then the formed edges may be joined at the corners by welding; brazing or otherwise  
 30 to form a coherent frame.

The upper of the extrusions 25 is provided at the upper end of its inward vertical wall with a hook member 28

shaped to be complementary, in the normal attitude of the translucent element as shown in Figure 3, on its concave surface 30, to the lip 22, and thus the concave surface 30 of the hook extends from the inner vertical wall 34 upwardly, inwardly, downwardly then outwardly under an inwardly projecting extent of the lip 22. A flange 32 preferably is provided, extending inwardly from the inner vertical wall 34, at a height, in the normal attitude of the sign, to just underlie the horizontal portion 18 of the L-shaped member of the main frame. Thus, 10 in addition to the complementary form of the hook and lip, there is formed on the sub-frame an L-shaped arrangement of the flange 32 and the portion 34 of the inner vertical member thereabove, which is complementary to and in the normal attitude of the sign, adjacent, the main frame L-shaped member.

The lip 22 and hook 28 are designed to allow rotation of the sub-frame upwardly and outwardly relative to the main frame.

The outwardly projecting end of the hook is spaced from the closest portion of the inward vertical wall 34 a 20 sufficient distance to be greater than those portions of the lip and ridge which are passed by the line joining the end of the hook to the closest portion of the inward vertical wall 34, during rotation of the sub-frame upwardly and outwardly for removal from the main frame; whereby with rotation of the sub-frame upwardly and outwardly, the hook may be detached from the lip, and hence the sub-frame from the main frame.

The angle at which the hook may be so detached is however determined by the inward vertical wall 34 and the extent of inward projection of the flange 32. In the normal 30 attitude of the sign, inward wall 34 of the sub-frame will, by bearing on the outer surface of ridge 20 prevent the removal of hook 28 from beneath lip 22. Moreover as the sub-

frame is rotated upwardly and outwardly the flange 32, prevents by bearing on the outer corner of the L-shaped main frame member, upward and/or inward sliding of the sub-frame relative to the main frame, even when the hook is removed from the lip, until the flange 32 is almost parallel to the outer surface of ridge 20.

In the preferred embodiment, the sub-frame is designed to have the translucent element 14 plane hang vertically and the design of flange 32 is such that the sub-frame must be  
 10 rotated upwardly and outwardly through an angle of about 70° before the sub-frame may be detached from the main frame in accord with the criteria just discussed.

The same L-shaped main frame extrusion is, preferably provided on the sides and bottom of the sign as well as the top, and the lip 22 may also be provided on the sides and bottom for the sake of standarization of parts, although the lip is not used on the sides and bottom. The sub-frame is provided with an L-shaped member complementary to the L-shaped main frame member on the sides and bottom and the hook on the sides and  
 20 bottom is replaced by a flange 36 extending horizontally inwardly in the normal attitude of the sub-frame to slidably contact the lip. The sign and the enlarged edges 27 are held against free vibration in the extrusion by resilient spread fingers of a member 20, which press inwardly over the inner wall of the extrusion and bias the sign outwardly against the outer edges of the extrusion defining the groove extrusion, thus providing weather tight sealing for the sign as well as vibration free mounting. Means for fixing the sub-frame in its attitude may (in any desired form) be provided at the bottom  
 30 of the member but in the embodiment shown a bolt 40 is provided for attachment of the main frame extrusion to the adjacent part of the sub-frame, and for detachment therefrom when

the sub-frame is to be swung upwardly or removed.

To allow work inside the sign without the removal of the sub-frame, it is contemplated that the sub-frame will be swung upwardly to an angle from the normal orientation of something less than the  $70^{\circ}$  allowed for removal. Accordingly means are preferably provided for suspending the sub-frame at such lesser angle. In the preferred embodiment, a standard 44 is pivotally connected to the part of the bottom sub-frame extrusion along an axis 46 vertical in the normal position of the sub-frame, and standard 44 is adapted to be located on and parallel to the extrusion when not in use. To use it, bolt 40 is removed allowing the sub-frame to be swung upwardly and outwardly through an angle of  $40-50^{\circ}$  where it is held in position by swinging the arm 44 inwardly to a position perpendicular to the extrusion where it rests in notches 48 in the bottom of the main frame.

10

Thus the translucent element and sub-frame may be held at  $40-50^{\circ}$  till the desired work is completed, but may be replaced by folding the arm back to its quiescent position and bolting the sub-frame through bolt 40 in its normal attitude.

20

The embodiments of the invention in which a restrictive property or privilege is claimed are defined as follows:

1. an illuminated sign having:
  - illumination elements;
  - a mounting frame therefor;
  - a ridge standing upwardly from said frame extending generally horizontally across said sign;
  - the upper edge of said ridge being provided with an inwardly extending lip;
  - a frame for holding a translucent sign element, an inwardly extending wall from said frame, adjacent the upper end thereof, arranged to overlie said lip;
  - said inwardly extending wall being provided with a downwardly, then outwardly extending hook, adapted to underlie the free end of said lip.
2. An illuminated sign wherein a translucent sign element is illuminated by an illuminating element including:
  - a frame for holding such illuminating elements and for attachment of said sign to a support;
  - an upwardly extending ridge supported by said frame and extending above the translucent element and adjacent the plane thereof, the upper edge of said ridge being provided with an inwardly extending lip;
  - a frame for holding the translucent element, said frame having an inwardly extending wall adapted to overlie said inwardly extending flange, and a hook extremity adapted to extend over the inward extremity of said flange and under the inward extremity thereof;

means in said translucent element frame operative in the normal position of said sign, for limiting inward movement of said sign to an extent less than the overlap of said hook with said flange.

3. An illuminated sign wherein an at least partially translucent element is illuminated by an illuminating element including:

a main frame for holding such illuminating elements and for attachment of said sign to a support;

an upwardly extending ridge supported by said frame and extending adjacent and approximately parallel the adjacent plane of said translucent element and located above the normal position of said translucent element;

the upper edge of said ridge being provided with an inwardly extending lip;

a frame for holding the translucent element;

an inwardly extending wall adapted to overlies, in the desired attitude of said translucent element, said inwardly extending flange to support the weight of said translucent element and frame therefor;

a hook member designed and constructed in the normal attitude of said sign to extend from the inward extremity of said sign downward over the inner edge of said lip and outwardly therebeneath;

said hook and flange being designed to allow rotation of said translucent element frame outwardly and upwardly relative to said illuminating element frame;

means co-operating between said frames for preventing, in the normal attitude of said sign, the sliding of said hook out from under said flange.

4. A device as claimed in claim 3 wherein the spacing of said hook from adjacent parts of said translucent element frame is sufficient, relative to the dimensions of said ridge and lip, to allow removal of said hook from said ridge and flange on rotation of said translucent element frame upwardly and outwardly relative to said main frame and translation of said translucent frame inwardly.

10 5. A device as claimed in claim 3 including means for limiting translation of said translucent element frame upwardly or inwardly sufficient to allow removal of said hook from said lip until said translucent element frame has swung upwardly and outwardly a predetermined amount relative to its normal attitude.

6. A device as claimed in claim 4 including means for limiting translation of said translucent element frame upwardly or inwardly sufficient to allow removal of said hook from said lip until said translucent element frame has swung upwardly and outwardly a predetermined amount  
20 relative to its normal attitude.

7. A device as claimed in claim 3 or 4 wherein said ridge is provided standing upwardly from an outwardly extending wall and said translucent element frame is provided with a stop surface arranged to underlie said outwardly extending wall and to limit movement of said translucent element frame toward said wall wherein the dimensions are such that said translucent element frame may be slid a predetermined amount upwardly and inwardly after said frame has been swung outwardly and upwardly  
30 at least through a predetermined angle, said predetermined



amount being sufficient to removal of said hook from beneath said flange.

8. A device as claimed in claim 5 and 6 including means for suspending said translucent element frame, in an orientation outwardly and upwardly from its normal attitude, at an angle less than the said predetermined angle.

9. An illuminated sign wherein an at least partially translucent element is illuminated by an  
10 illuminating element comprising:

a main frame for holding such illuminating elements and for attachment of said sign to a support;

said main frame, above the intended location of the translucent element, in its normal attitude, being provided with a first L-shaped wall extending outwardly and upwardly the upper end of which is provided with an inturned lip;

a frame for holding said translucent element having a second L-shaped wall complementary and adapted  
20 to fit below and on the outside of said first L-shaped wall;

the upper extremity of said second L-shaped wall being provided with a hook member shaped to extend over, inside, then under said lip, said lip and said hook being designed to allow rotation therebetween, whereby said translucent member frame may be rotated outwardly and upwardly relative to said main frame.

10. An illuminated sign having:

illumination elements; a mounting frame there-  
30 for; a ridge standing upwardly from said frame extending generally horizontally across said sign; the upper edge of

said ridge being provided with an inwardly extending lip; a frame for holding a translucent sign element, a wall inwardly extending from said translucent element frame adjacent the upper end thereof adapted to overlie said lip; said inwardly extending wall being provided with a downwardly extending portion.

11. An illuminated sign wherein a translucent sign element is illuminated by an illuminating element including:

10 a frame for holding such illuminating elements and for attachment of said sign to a support; an upwardly extending ridge supported by said frame and extending above the translucent element and adjacent the plane thereof, a frame for holding the translucent element, said frame having an inwardly extending wall adapting to overlie said ridge and a hook extremity adapted to extend over the inner part of said ridge.

12. An illuminated sign wherein an at least partially translucent element is illuminated by an illuminating element comprising:

20 a main frame for holding such illuminating elements and for attachment of said sign to a support; said frame, above the intended location of the translucent element, being provided with a first L-shaped wall extending outwardly and upwardly; a frame for holding said translucent element having a second L-shaped wall complementary and adapted to fit below and on the outside of said first L-shaped wall; the upper extremity of said second L-shaped wall being provided with a hook member shaped to extend over then inward of the upper end of the first L-shaped member, said hook and said L-shaped member being designed to allow rotation therebetween whereby  
30 said translucent member frame may be rotated outwardly and upwardly relative to said main frame.